Missouri Department of Natural Resources
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Requirements for Asbestos and Lead Paint Abatement

Hazardous Waste Program technical bulletin 9/2004

Abatement of asbestos-containing material (ACM) and lead-based paint (LBP) are regulated by various federal, state and local laws and regulations. This combined with the large volume of routine work performed across the nation has resulted in standard industry practices. Projects performed under the department's Brownfields/Voluntary Cleanup Program (B/VCP) involving ACM and LBP abatement must comply with these and other local, state and federal rules and regulations.

Because asbestos and LBP abatement projects tend to follow a standard "cookbook" approach and fall under the jurisdiction of existing inspection and enforcement programs, the department has sought to minimize additional paperwork required to perform these projects under the B/VCP. Department approval of a Remedial Action Plan (RAP) is required by the B/VCP prior to hazardous substance cleanups pursuant to 10 CSR 25.010(5). For ACM and LBP abatement, certain basic items should be included in the RAP, as described in the following sections. Not all projects may require every item. Likewise, there may be special circumstances for a given project that require responses not listed here. Those will be determined on a case-by-case basis by the B/VCP's project manager for the site.

Asbestos

In most of Missouri, ACM is regulated by the department's Air Pollution Control Program (APCP) pursuant to 40 CFR Part 61, Subpart M, *"The National Emission Standard for Asbestos,"* (NESHAP). However, there are four key areas of the state where the department has delegated asbestos-related activities to local authorities: Kansas City, St. Louis, St. Louis County and Springfield. It is very important when performing an asbestos-related project in one of these areas that you contact the appropriate agency with jurisdiction in that area to determine all applicable requirements. These local agencies enforce their own rules, which may be more stringent than state regulations. The local agencies are listed below with contact phone numbers.

Jurisdiction	Agency	Phone
St. Louis (City)	St. Louis Division of Air Pollution Control	(314) 613-7300
St. Louis (County)	St. Louis County Health Department	(314) 615-8923
Kansas City	Kansas City Health Dept., Air Quality Section	(816) 513-6314
Springfield	Springfield-Greene County Health Dept.	(417) 864-1662

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B/VCP Remedial Action Plan (RAP) for Asbestos Abatement

If a Certification of Completion for a site is desired from the department under the B/VCP, the site must be enrolled in the B/VCP with a signed letter of agreement prior to remediation of any hazardous substances on the site. The B/VCP must review and approve all RAPs prior to implementation.

Asbestos abatement plans may be included as part of a general RAP for a B/VCP site in the event that other remediation is required. Asbestos abatement may also be done under a separate RAP.

The RAP should include, but not be limited to, the following information:

1. Copies of any asbestos inspection or survey reports, to include
   - Tables showing all suspect ACM tested, results including percent asbestos, type of asbestos and quantity of material (sq. ft. or linear feet),
   - Lab raw data reports
   - Maps, drawings or photos (photos should be submitted as color photocopies or original prints - no black and white photocopies please)
2. Copies of all abatement notification forms sent to the local government or the department. Kansas City, St. Louis and Springfield and St. Louis County have local air pollution control divisions to which these forms are submitted; for other areas of the state, notifications are sent to the department.
3. General description of abatement techniques to be used in each area of the building and on each different material (for example, whether the work will be done in a sealed area, using glove bags, etc.)
4. Who will perform work and a statement that contractor is a Missouri licensed asbestos abatement contractor
5. Who will perform air monitoring and clearance sampling
6. Final property use goal (i.e. residential, commercial, industrial as defined in *Cleanup Levels for Missouri* (CALM) as scenario A, B or C respectively)

Asbestos Abatement Final Report

When the asbestos abatement work is complete, submit a final report to the B/VCP, to include at a minimum

1. All air monitoring results, including final clearance testing
2. Waste disposal documentation (such as landfill tickets)
3. Description of any ACM to remain in place, along with drawings or maps of location(s)
4. Operation and Maintenance (O&M) plan for any ACM remaining
5. Document any significant deviations from the RAP

A sample O&M Plan for ACM is attached and should be used as a guide only. For B/VCP sites, the department requires that the plan be filed in the property chain of title as an institutional control to ensure that future occupants, maintenance personnel, contractors, owners and prospective buyers are aware of the presence of ACM and of the O&M requirements necessary to maintain safe conditions.

Leaving ACM In Place at B/VCP Sites

Three situations, which have all been encountered at B/VCP sites, are addressed in this section:

1. ACM inside buildings undergoing renovation
2. Random ACM contained in historically buried construction and demolition (C&D) debris onsite
3. Intentional ACM landfills

Leaving ACM In Place in Renovated Structures

While state and federal laws and regulations require proper handling and disposal by qualified personnel if asbestos is removed, there is no requirement that it be removed from a building at any given time unless a building is to be demolished or renovated in such a way that a NESHAP minimum quantity of friable asbestos is disturbed, thus requiring its removal. Other than these situations, the department does not necessarily require removal of all ACM from structures at B/VCP sites as a condition for obtaining a Certification of Completion through the B/VCP.

It may be necessary or desirable to remove some ACM and leave other material in place in a building. Some examples are asbestos floor tile, asbestos pipe insulation in areas that are inaccessible or will not be modified, and transite materials on building exteriors.

Potentially friable asbestos materials to be left in place must be “encapsulated” (coated, fully enclosed, etc.) using standard industry practices. As required by regulations, clearance sampling must be conducted following the removal and encapsulation work.

The owner must develop an Operation and Maintenance Plan (details below) for material left in place. If a Restrictive Covenant is to be executed for the site related to other aspects of a cleanup (for example, restricted use soil cleanup standards were used, or soil contamination is left on-site under a cap), the O&M plan can be included as an attachment to the covenant. If no Covenant is to be executed, the O&M plan should be a stand-alone document.

Operation and Maintenance Plan for ACM in Structures

An Operation and Maintenance Plan for ACM should include the following:

- Location of the ACM within the building(s) including maps and drawings as appropriate
- Description of material including type and quantity
- Description of accessibility (i.e. in restricted access area or not)
- Protocol and schedule for regular inspections
- Contingency plans to be implemented in the event the ACM is damaged or the material must be disturbed, for example during maintenance of insulated equipment or nearby equipment or structures.

The O & M Plan must be reviewed and approved by B/VCP. The presence of ACM and the existence of an O&M Plan will be referred to in the B/VCP Certification of Completion for the site. The Certification will be contingent upon the O&M plan being followed. Both documents must be filed in the property chain of title.

Buried Asbestos-Containing Building Debris

This section applies to ACM as a constituent of historical fill material such as from demolition of former buildings and burial of the debris in the building’s basement, a situation commonly encountered at urban redevelopment sites. This on-site disposal of C&D debris, whether it contains ACM or not, is not allowed under current solid waste regulations, but was common practice

in the past. Old building debris may have poor geotechnical characteristics and sometimes must be removed to provide a suitable building pad or to install foundation footers. This may result in the excavation of ACM or ACM-contaminated debris.

In most cases, the department does not consider it necessary to excavate large volumes of buried demolition debris for the sole purpose of recovering a relatively small amount of ACM. However, any material dug up that is suspected ACM (for example, pipe insulation) should be segregated and either tested, or assumed to be ACM, and disposed of appropriately. The excavation should be overseen by, and any ACM handled by, trained asbestos abatement personnel, in accordance with current asbestos regulations. If there is no reason to suspect that large quantities of ACM were landfilled at the site and such materials are not encountered during excavation (i.e., no ACM left on-site beyond deminimus quantities in buried demolition debris), no institutional controls are necessary upon closure of the B/VCP site.

Historical Asbestos Disposal Sites

Large quantities of ACM were buried prior to the advent of landfill permitting requirements. These materials may include, but are not limited to, scrap from the production of transite building products, brake pad or drum production or refurbishing wastes, or refractory materials. These wastes were sometimes deposited near the production facility. Under the B/VCP, remedial action alternatives have included both removal and encapsulation in place. Removal must be followed by disposal in a permitted landfill in accordance with asbestos and solid waste regulations. For B/VCP sites, the installation of an engineered cap always requires placement of a restrictive covenant in the property chain of title to provide for maintenance and to prevent disturbance of the landfill, as outlined in the CALM guidance. As with all remedial actions overseen by the B/VCP, a RAP must be reviewed and approved by the department prior to implementation.

For More Information

For more information on asbestos, see:

- *Asbestos* Fact Sheet, Missouri Department of Natural Resources (pub 2077) www.dnr.mo.gov/oac/pub2077.pdf
- U.S. Environmental Protection Agency Asbestos Home Page: www.epa.gov/asbestos/index.htm
- Contact the Air Pollution Control Program at 1-800-361-4827 or (573) 751-4817 or local authorities listed on Page 1.

Lead-Based Paint

Removal of LBP and LBP dust that may be a hazard to human health or the environment (i.e. flaking and peeling paint) is required for renovation projects overseen by the B/VCP. Paint in good condition may be left in place provided that exposures are minimized and appropriate institutional controls are put in place.

Abatement projects must follow all state and federal regulations including clearance sampling to satisfy B/VCP standards pertaining to lead based paint (CALM Appendix A).

Encapsulation usually involves recoating lead painted surfaces with suitable sealants such as epoxy paint, concrete, drywall, etc. If LBP is to be left in the building, an Operation and Maintenance (O&M) Plan must be prepared. For B/VCP sites, the department requires that the O&M

plan be filed in the property chain of title as an institutional control to ensure that future occupants, maintenance personnel, contractors, owners, and prospective buyers are aware of the presence of LBP and of the O&M requirements necessary to maintain safe conditions.

B/VCP Remedial Action Plan for Lead Paint Abatement

If a Certification of Completion is to be obtained from the department under the B/VCP, the site must be enrolled in the B/VCP with a signed letter of agreement. The B/VCP must review and approve all RAPs prior to implementation.

Lead paint abatement plans may be included as part of a general Remedial Action Plan for a B/VCP site in the event that other remediation is required. Lead paint abatement may also be done under a separate RAP.
Lead paint abatement standards for final clearance (CALM 2001) are shown in the table below (also refer to CALM Appendix B).

Table I: Lead Paint Clearance Criteria

Sample Location	Scenario A Unrestricted Use[1] Micrograms per sq. ft.	Scenario B and C Commercial and Industrial[2] Micrograms per sq. ft.
Floors	40	200
Window Sills (interior)	250	500
Window Wells (interior)	800	800

1 EPA
2 Missouri Office of Administration

The RAP should include, but not be limited to, the following information:
1. Copies of any LBP inspection or survey reports, to include:
   - Tables showing all suspect paint tested and test results including percent lead, paint color and square footage
   - Laboratory raw data reports
   - Maps, drawings or photos (photos should be submitted as color photocopies or original prints - no black and white photocopies please)
2. General description of abatement techniques to be used in each area of the building including workspace isolation, paint removal, dust suppression and final cleaning
3. Clearance sampling protocols including approximate sample locations, approximate number of samples, sample type (wall, floor, window sill, window well)
4. Clearance sampling goals
5. Who will perform abatement work, air monitoring and clearance sampling; documentation of credentials and certifications
6. Final property use goal (i.e. residential, commercial, industrial as defined in CALM as scenario A, B or C respectively)

Final Report

When the LBP abatement work is complete, submit a final report to the B/VCP, to include

1. Final clearance wipe sampling results
2. Waste disposal documentation (such as landfill tickets)
3. Whether any lead painted surfaces remain along with drawings or maps of location(s)
4. O&M plan if any LBP remains
5. Document any significant deviations from the RAP

A sample O&M Plan for LBP is attached. For B/VCP sites, the department requires that the O&M plan be filed in the property chain of title as an institutional control to ensure that future occupants, maintenance personnel, contractors, owners, and prospective buyers are aware of the presence of LBP and of the O&M requirements to maintain safe conditions.

Operation and Maintenance Plan for Lead Paint in Structures

An Operation and Maintenance (O&M) Plan for LBP should include the following:

1. Location of the LBP within the building(s) including maps and drawings showing the location of LBP
2. Description of accessibility (i.e. in restricted access area or not)
3. Protocol and schedules for regular inspections
4. Contingency plans to be referred to in the event that the LBP, or its encapsulating material, is damaged or must be disturbed during maintenance or renovation

The O&M Plan must be reviewed and approved by the B/VCP. The presence of the LBP and the existence of the O&M Plan will be referred to in the B/VCP Certification of Completion for the site. The Certification will be contingent upon the O&M plan being followed. Both documents should be filed in the property chain of title upon completion of the project.

More Information

For more information on LBP abatement, see

- *Disposal of Demolition Wastes Contaminated with Lead and/or Other Heavy Metals*, Fact Sheet, 8/2004, Missouri Department of Natural Resources (PUB2002).
- U.S. Environmental Protection Agency Office of Lead Programs, www.epa.gov/lead/
- HUD Office of Healthy Homes and Lead Hazard Control: www.hud.gov/lea/leahome.html

For further information call or write
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